

EFFECT OF POULTRY LITTER ON *HETERODERA GLYCINES* REPRODUCTION

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SUMMARY

Soybean cyst nematode (SCN), *Heterodera glycines*, management in soybean production relies on use of incompletely resistant cultivars to reduce SCN reproduction and associated potential risk of yield loss. A poultry litter study was initiated to change soil biological composition and potentially reduce SCN reproduction. Our objective was to use Normalized Difference Vegetation Index (NDVI), soybean yield, plant height, leaf area index (LAI), and SCN egg population density to quantify the impact of poultry litter application on SCN reproduction and plant response. Data were collected for three years as part of a field study with two rates of poultry litter applied annually in the spring compared with conventional fertilizer application. Plots receiving chicken litter had significantly higher yield in 2008 ($P=0.002$) and 2009 ($P=0.03$) than plots fertilized with traditional inorganic material. The 2007 growing season was especially dry and no treatment differences were significant. NDVI and LAI were good predictors of plant height and soybean yield for all years. Post-harvest SCN egg population density was inversely correlated with yield ($r=-0.47$, $P=0.003$) during 2007, but was positively correlated with yield in 2008 ($r=0.61$, $P<0.0001$) and 2009 ($r=0.30$, $P=0.06$).